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SUPERFUND PROGRAM REMEDIAL INVESTIGATION



SKINNER LANDFILL SITE WEST CHESTER, OHIO

APRIL 1987

INTRODUCTION

The U.S. Environmental Protection Agency (U.S. EPA) recently completed the first part (referred to as Phase I) of a two-phase remedial investigation (RI) at the Skinner landfill site in West Chester, Ohio. The RI involves collecting and analyzing data necessary to define the nature and extent of the contamination problem at the site. This fact sheet provides background information on the Skinner Landfill site, summarizes the Phase I RI findings, and describes the Phase II RI activities planned for the site. For residents interested in reviewing the Phase I RI report, the report will be available in May at the information repository located at the Union Township Library.

THE SITE

The Skinner Landfill site occupies seventy-eight acres of land within the Town of West Chester in Union Township, Butler County, Ohio. The site consists of wooded, hilly terrain bordered on the east by railroad tracks and on the west by the Cincinnati-Dayton Road. Located on the site is a buried lagoon; an area which may contain buried drums called the central shoulder area; an active landfill; and several on-site ponds. An unnamed creek and East Fork Mill Creek also flow in a southwest direction through the site. Several single family homes and the Union Elementary School are located adjacent to and across the street from the site (see site map).

SITE BACKGROUND

The Skinner Landfill property has

been owned by the Skinner family since the 1930s. Portions of the property were used for disposal of wastes. In 1963, the Butler County Health Department approved a permit application for Albert Skinner to operate a sanitary landfill on his property; however, a subsequent application from Skinner to install and operate an incinerator at the site was not approved.

From 1963 to 1976, the Butler County Health Department and Southwestern Ohio Air Pollution Control Agency received from nearby residents periodic complaints of heavy smoke and odors coming from the site. On April 18, 1976 a fire at the site sparked immediate attention from local and state officials. Ohio Environmental Protection Agency (Ohio EPA) conducted investigations at the site and found that industrial and chemical wastes had been disposed at the site. Due to the results of these investigations, the site was listed on the U.S. EPA Superfund National Priorities List (NPL) in December 1982.

REMEDIAL INVESTIGATION

U.S. EPA separated the RI into two phases to learn early in the RI whether there was contamination migrating from the site that might affect residents or the environment near the site. During Phase I of the RI, U.S. EPA found no significant contamination migrating off site that would immediately affect nearby residents or the environment.

The overall purpose of the RI is to collect and evaluate information to achieve the following:

- Determine the extent of on- and off-site soil contamination;
- Determine the presence and extent of ground-water contamination and ground-water direction and rate of flow;
- Determine whether contaminants are migrating off site via surface water runoff, stream flow, or seepage from the landfill areas; and
- Identify and assess the potential risks to human health and the environment posed by the site.

From March through May 1986, U.S. EPA contractors collected samples from soil, surface water, sediments, and ground water (see site map). Surface soil was sampled at thirteen locations on and off site. Eighteen monitoring wells were installed and sampled. Fifteen of these wells were resampled in August 1986. Seven residential wells in the vicinity of the site were also sampled. Finally, fifteen surface water and sediment samples were collected from four on-site ponds, the unnamed creek, and East Fork Mill Creek.

GROUND WATER RESOURCES

- Results of the hydrogeological investigation revealed that two aquifer systems underlie the Skinner Landfill site. The upper aquifer consists of sand and gravel and the lower aquifer consists of alternating layers of shale and limestone bedrock. Ground water in the upper aquifer generally flows from high, hilly areas downward to either the unnamed creek or East Fork Mill Creek.

samples. Acetone, methylene chloride, and PAHs were the most prevalent compounds identified at the site. The highest concentrations of these contaminants were found in the sediments collected at the leachate seep near East Fork Mill Creek. PCB compounds were detected at the northernmost pond located between unnamed creek and the central shoulder area.

FUTURE SITE ACTIVITIES

In early April 1987, U.S. EPA contractors will return to the Skinner Landfill site for approximately two months to collect samples for Phase II of the RI. This second part of the RI will focus on further investigating some of the areas sampled during Phase I, and identifying the presence and extent of contamination in the buried lagoon and central shoulder areas of the site. Specific activities planned for Phase II of the RI are:

- Collecting additional soil samples in the area near the leach-

ate seep near East Fork Mill Creek;

- Sampling subsurface soils in the buried lagoon and central shoulder areas to determine the nature and extent of contamination;
- Sampling surface soils in the drum pile area to assess the type of contamination present;
- Collecting additional sediment samples from the northernmost pond to better define the extent of contamination;
- Installing and sampling two additional monitoring wells and resampling three existing wells to better define ground-water quality and the extent of contamination in the central shoulder area; and
- Conducting a risk assessment to identify the potential risks to human health and the environment posed by the site.

After the Phase II samples have been analyzed, a report summarizing both the Phase I and II results will be

prepared and made available for public review. When the RI report has been completed, U.S. EPA will hold a public meeting to review the findings of the RI.

Following completion of the RI, U.S. EPA will then prepare the feasibility study (FS). Based on the findings of the RI, several alternatives for addressing site contamination will be proposed. During the FS, each alternative will be evaluated based on its effectiveness in protecting public health and the environment, its technical feasibility, and its cost. From the findings of the FS, U.S. EPA will choose a plan for addressing contamination at the Skinner Landfill site that is both environmentally sound and cost-effective. Before a final cleanup plan is chosen by U.S. EPA and Ohio EPA, however, local officials and the community will have an opportunity to review and comment on the proposed remedial alternatives during a minimum three-week public comment period.

GROUND WATER CONTAMINATION

- Organic contaminants were detected in monitoring wells in the vicinity of the buried lagoon and active landfill. The contaminants detected most frequently were: acetone, toluene, benzene, and methylene chloride.
- Of seven residential wells sampled, only one is used for drinking water. No contaminants were detected in the well that is used. For the remaining wells, low concentrations of two volatile organic compounds were found in one of the residential wells sampled and trace amounts of two pesticides were detected in another. No other organic contaminants were found in the remaining residential wells, and all inorganic compounds were detected at levels below federal drinking water standards.

SOIL CONTAMINATION

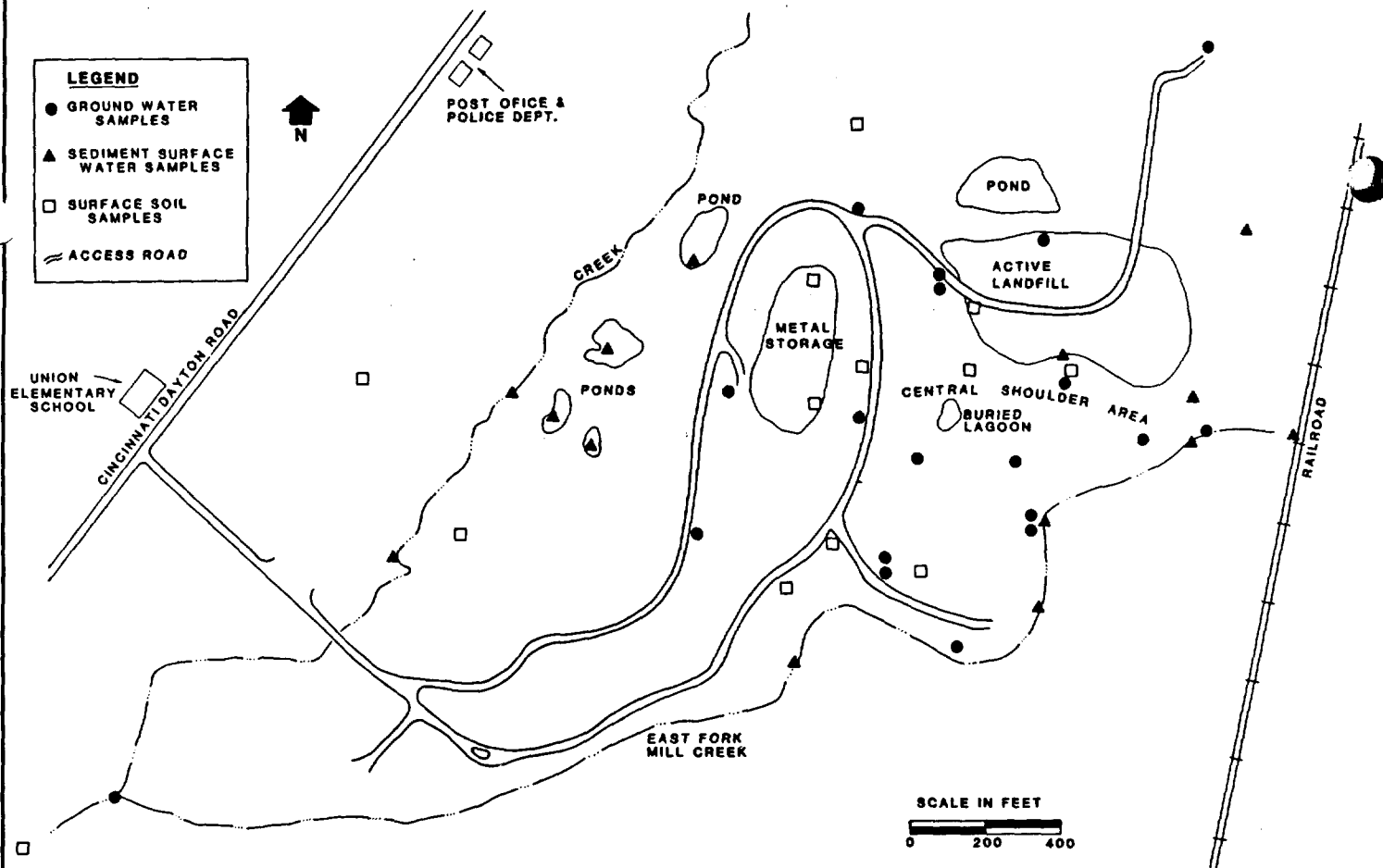
- Analysis of surface soil samples revealed organic contamination of both on- and off- site soils. The highest concentration of volatile organic compounds (mainly acetone and methylene chloride) were found in off-site soils. Polynuclear aromatic hydrocarbons (PAHs) were the contaminants found most commonly in the surface soil on site and also were detected in the central shoulder and buried lagoon area.
- Several piles of drums were discovered during Phase I of the RI. Most of the drums were empty or contained small amounts of sludge. It appears that the contents of these drums leaked onto the surrounding area.
- Several geophysical methods were used during Phase I to gather information regarding

buried drums, contaminant migration, and subsurface conditions. The location of the buried lagoon has been better defined, and the central shoulder area appears to have numerous drums located below the surface.

SURFACE WATER/SEDIMENTS

- No inorganic contaminants exceeding background concentrations were detected in surface water samples collected at the site. Except for one semi-volatile organic contaminant, all concentrations of organic compounds detected in surface water samples were below federal standards.
- High levels of organic contaminants were found in a leachate sample taken from the north bank of the East Fork Mill Creek.
- Organic contaminants were detected in most of the sediment

SKINNER LANDFILL SITE MAP



AVAILABLE INFORMATION

Anyone desiring additional information about the RI/FS process or specific site activities is encouraged to review the various U.S. EPA documents that have been prepared for the Skinner Landfill site. Copies of the applicable laws, the work plan for RI/FS activities, the community relations plan, and the Phase I RI report are available at:

Union Township Library

7900 Cox Road

West Chester, Ohio 65060

Hours: 10 a.m. - 8:30 p.m. (M-Th)

10 a.m. - 5:30 p.m. (Fri.)

10 a.m. - 3:00 p.m. (Sat.)

For more information, you may contact the following U.S. EPA staff:

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U.S. EPA — REGION V

230 South Dearborn Street

Chicago, IL 60604

Toll Free Number 1-800-621-8431

(8:30 a.m. — 4:30 p.m. Central Time)

MAILING LIST ADDITIONS

To be placed on the mailing list to receive information on the Skinner Landfill site, please fill out and mail this form to:

Margaret McCue
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U.S. EPA - Region 5
230 South Dearborn Street
Chicago, Illinois 60604

Name: _____

Address: _____

Affiliation: _____

Telephone: _____

